To test or not to test?

Gonorrhoea in asymptomatic heterosexuals in Switzerland

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Background

The incidence of Gonorrhoea (GO) in Switzerland rose from 12.06/100'000 (2008) to 28.61/100'000 (2017). As STI testing is expensive (tests for GO, Chlamydia, Syphilis and HIV cost €350 in Switzerland, paid for by clients) and asymptomatic infection in heterosexuals seems rare, some experts recommend testing only high-risk groups such as MSM and FSW. However, our data calls for a more differentiated approach.

Methods

Since 2016, our anonymous testing clinic (**Figure 1**) offers pooled swabs (pharyngeal, genital and rectal) for GO/Chlamydia using cobas® 4800CT/NG multiplex-assay in addition to the previously available HIV/Syphilis tests. In January 2017 we lowered the price for tests to €100 and introduced an online booking-system. Demographic and behavioural data and test results were collected using an anonymous online tool. We analysed all STI results from one calendar year focusing on GO cases in our asymptomatic clients.

Results

From January to December 2017, we tested 2323 clients for HIV. Of these, 1347 added additional screening for syphilis and 1106 for CT/NG. The proportion of clients who added NG/CT diagnostics to HIV and Syphilis increased from 19.5% to 66.7% from January to December 2017. Overall, **three were positive for HIV, 7 for Syphilis, 47 for Chlamydia and 16 for GO**. Most patients with a positive result for GO were heterosexual (7 men, 2 women), 7 were MSM. Those who paid for sex in the last year (only heterosexual men) were more likely to have a positive test for GO (OR 5.6, p=0.01). Both the number of male and female partners were associated with increased odds for GO infection (**Figure 2**).

Figure 2: Odds ratios of a positive test for Gonorrhoea
Odds ratios (95% CI) of univariate logistic regression models for the presence of a positive test result for Gonorrhoea are depicted with blue circles (grey lines). Orange circles represent the reference state in categorical variables. Hetero = heterosexual individuals, MSM = men having sex with men.

Figure 1: Our anonymous STI testing clinic

	Gonorrhea [n (%) or meand(sd)]			
	Positive	Negative	OR (95% CI)	p value
n	16	1090		
Gender (%)				
female	2 (12.5%)	344 (31.6%)	1	0.116
male	14 (87.5%)	732 (67.2%)	3.3 (0.9 – 21.0)	
Age (mean (sd))	33.9 (9.4)	33.8 (9.8)	1.0 (0.9 – 1.1)	0.939
Sexual Orientation (%)				
Hetero	9 (56.2%)	810 (74.3%)	1	<0.001
MSM	7 (43.8%)	102 (9.4%)	6.2 (2.2 – 16.9)	
Paid for Sex (%)	6 (37.5%)	104 (9.5%)	5.6 (1.8 – 17.3)	0.002
Alcohol Use for Sex (%)	1 (6.2%)	107 (9.8%)	0.6 (0.0 – 3.3)	0.659
Party Drugs for Sex (%)	2 (12.5%)	87 (8.0%)	1.8 (0.3 – 7.0)	0.471
Condom Use with Casual Sex Partners (%)				
Always	2 (12.5%)	203 (18.6%)	1	0.830
Sometimes or Never	4 (25%)	363 (24.1%)	1.2 (0.2 – 8.7)	
No Answer	3 (18.8%)	244 (22.4%)		
Condom Use of MSM with Casual Sex Partners (%)				
Always	4 (25.0%)	55 (5.0%)	1	0.857
Sometimes or Never	1 (6.2%)	9 (0.8%)	1.2 (0.1 – 9.1)	
No Answer	2 (12.5%)	38 (3.5%)		
Number of MALE Sex Partners in last 12 Months (%)				
0 - 2	1 (6.2%)	170 (15.6%)	1.0	0.322
3 - 10	3 (18.8%)	162 (14.9%)	3.1 (0.4 – 64.0)	
More than 10	2 (12.5%)	30 (2.8%)	11.3 (1.1 – 248.4)	
Number of FEMALE Sex Partners in last 12 Months (%)				
0 - 2	1 (6.2%)	201 (18.4%)	1	0.672
3 - 10	2 (12.5%)	239 (21.9%)	1.7 (0.2 – 36.4)	
More than 10	2 (12.5%)	21 (1.9%)	19.1 (1.8 – 422.3)	

Table 1: Demographics and risk behaviour by presence of a positive test for Gonorrhoea

Hetero = heterosexual individuals, MSM = men having sex with men, OR = univariate odds ratios

Conclusion

This study demonstrates that the majority of asymptomatic GO infections as a source of onward transmission remain undiagnosed if routine STI testing is based on demographic risk-groups only. We are convinced that easy-access and low-cost STI testing for all people at risk will be crucial to reduce the spread of GO in Switzerland.